

CLAIMS

[1] A method of removing unburned carbon from fly ash comprising the steps of:

adding water to fly ash to produce slurry;

adding collector to said slurry;

feeding said slurry and collector to a submerged agitator having a rotation shaft penetrating a cylindrical main body in an axial direction thereof, plurality of chambers formed by dividing an inside of the main body in the axial direction thereof and an agitating vane fixed to the rotation shaft and rotating in each chamber, and adding shearing force to said slurry and collector;

adding frother to said slurry and collector to which the shearing force is added;

agitating said slurry and collector to generate air bubbles; and

adhering unburned carbon of said fly ash to the air bubbles to rise said unburned carbon.

[2] The method of removing unburned carbon from fly ash as claimed in claim 1, wherein said agitating force when the submerged agitator add shearing force to said slurry and said collector is 0.7 kWh/m^3 or more and 10 kWh/m^3 or less per unit quantity of slurry.

[3] The method of removing unburned carbon from fly ash as claimed in claim 1 or 2, wherein concentration of said fly ash in the slurry is 3 weight percent or more and 50 weight percent or less.

[4] The method of removing unburned carbon from fly ash as claimed in claim 1, 2 or 3, wherein amount of said collector added is 5 weight percent or more, and 100 weight percent or less of amount of said unburned carbon of said fly ash.

[5] The method of removing unburned carbon from fly ash as claimed in one of claims 1 to 4, further comprising the steps of separating with a solid/liquid separation device water of fly ash slurry that is separated through flotation, and water separated is added to new fly ash or/and the water is used to erase bubbles when adhering unburned carbon to air bubbles, for purpose of reuse.

[6] The method of removing unburned carbon from fly ash as claimed in one of claims 1 to 5,

wherein said unburned carbon of said fly ash separated through flotation is used as fuel.

[7] The method of removing unburned carbon from fly ash as claimed in one of claims 1 to 6, wherein said unburned carbon content in said fly ash separated through flotation is 1 weight percent or less and is used as a mixing material for cement.

[8] The method of removing unburned carbon from fly ash as claimed one of claims 1 to 6, wherein said unburned carbon content of fly ash separated through flotation is 1 weight percent or less and used as a material for manufacturing lightweight aggregate.